DOCUMENT RESUME

ED 360 372 TM 020 276

AUTHOR Rathunde, Kevin
TITLE Measuring the Experience of Motivation: Contributions of the Experience Sampling Method to Educational Research.
PUB DATE Apr 93
NOTE 10p.; Paper presented at the Annual Meeting of the American Educational Research Association (Atlanta, GA, April 12-16, 1993).
PUB TYPE Reports - Evaluative/Feasibility (142) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Affective Behavior; *Data Collection; *Educational Research; Elementary Secondary Education; *Learning; *Measurement Techniques; *Research Methodology; Student Experience; *Student Motivation
IDENTIFIERS *Experience Sampling Method; Self Report Measures

ABSTRACT

An often ignored aspect of the study of motivation is the experience of motivation, how it feels to learn. Researchers and practitioners have been clear about the importance of subjective experience to motivation, but have paid little attention to measuring the experience of motivation, possibly because it is so hard to measure. The Experience Sampling Method (ESM) developed by M. Csikzentmihalyi, R. Larsen, and S. Prescott (1977) is suggested as a way to study the experience of motivation. The ESM uses electronic pagers to signal participants in a study to prompt them to fill out a self-report form about the quality of their experience at that moment. Among the advantages of the ESM is that it gathers information about behavior at the same time as it gathers information about the inward stream of experience. It is still, however, a reconstruction of experience, because the pager interrupts the very stream of experience one is hoping to measure. Despite its shortcomings, it is still one of the few methods that can disclose the ongoing experiences of students in natural school settings. Some research applications for the ESM are outlined. (SLD)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED360372

Measuring the Experience of Motivation: Contributions of the Experience Sampling Method to Educational Research

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
✓ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

Kevin Rathunde, Ph.D.
University of Utah

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
KEVIN RATHUNDE
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

My understanding of the problem with motivation research can be illustrated by a few quotes from teenagers. The first comes from a 14 year old female who was studying late one night (see Csikszentmihalyi & Larson, 1984, p.101): "This homework is driving me up a wall -- I am just sick of it. It is boring and useless and I wish I could do something else -- anything else! I hate homework, especially when my sister doesn't have any." Most everyone would agree that this quote says a lot about motivation and has a ring of truth to it. Why? Because all of us at one time or another have *experienced the same feelings* ourselves; and if we have children, we've probably heard similar comments. Here is what a male adolescent says about the difficulty he is having studying for a test because his girlfriend, Aria, is with him (see Csikszentmihalyi & Larson, 1984, p.101): "I can't study with Aria here. How can I keep my mind on what I'm supposed to be doing instead of what I *want* to do." Again, a familiar experience that most of us have had.

The above quotes illustrate two common difficulties associated with low motivation -- feelings of boredom and the inability to pay attention. But what about highly motivated teenagers, students who enjoy the schoolwork they're doing? Here is what Ben, a talented 15 year old art student, says about an art project that required him to build a Viking ship out of balsa wood (Csikszentmihalyi, Rathunde, & Whalen, 1993, p.132): "I started working with balsa wood and I saw that I could create things, not just draw them. I had so much fun doing that." Or consider this remark from the mother of Josh, a 14 year old student who is exceptionally talented in math: "He will earn a doctorate in something that interests him. He'll be driven more by his interests than large amounts of money."

TM020276

BEST COPY AVAILABLE

I've selected these quotes because they illustrate *the importance of subjective experience to motivation*. Boredom and the inability to concentrate manifest "negative" motivation; and enjoyment and interest indicate "positive" motivation. These are not, however, atypical comments; ask students why they succeed or fail at math, for instance, and they will often explain themselves in terms of how they feel while doing math. Likewise, some research has shown that when teachers are asked why some students fail and others succeed, the most common response is that successful students are interested in the material (Krapp, 1989). Students know it, teachers know it, even parents -- who are often the last to know -- know it: students learn more when they are feeling interested and involved in what they are doing. They "come out" of themselves to join and be joined in discussion; they open up to a book and create that magical "betweenness" that is the essence and the literal meaning of the word interest.

Philosophers, psychologists and educational researchers also know about the relationship between learning and feelings of interest. There is no clearer evidence for this fact than the writings of two of America's greatest and most influential scholars -- William James and John Dewey. For instance, James has commented:

> "Millions of items in the outward order are present to my senses which never properly enter into my experience. Why? Because they have no *interest* for me. *My experience is what I agree to attend to* . Only those items which I *notice* shape my mind - without selective interest, experience is an utter chaos"
> (James, 1890, p. 402).

At the turn of the century James envisioned the field of psychology as producing a "topography" of human energy. He encouraged the study of selective interest not just as a quantity of attention (which has been the main focus of cognitive psychology, the discipline many credit him with fathering), but also the *quality* of this interest and the means whereby it was nurtured and released. He was well aware of what many motivation researchers today call intrinsic motivation. "For

to miss the joy is to miss all," says James (1917, p.7) quoting Robert Louis Stevenson, "In the joy of the actors lies the sense of any action. That is the explanation, that the excuse." He continues: "Yet in what other *kind* of value can the preciousness of any hour consist . . .if it consist not in feelings of excited significance like these . . ." (p.13)

John Dewey, even more explicitly than James, emphasized the relationship between interest and learning. He said in his book Experience and Education: "Everything depends upon the *quality* of experience which is had" (1938, p. 27). And experiences of the highest quality he called *integral experiences* (see Dewey, 1980), and suggested they were "playful and serious at the same time" (1933, p. 286). He described them in the following way:

> In such experiences, every successive part flows freely, without seam and without unfilled blanks, into what ensues. At the same time there is no sacrifice of the self-identity of the parts. A river, as distinct from a pond, flows. But its flow gives a definiteness and interest to its successive portions greater than exist in the homogeneous portions of a pond (1980, p.36).

In more straightforward language, what Dewey meant was that optimal interest in a task unites the process of doing the activity and the goal being sought, such that a person's attention is full and undivided.

Given the fact that students, teachers, parents, and seminal thinkers in the fields of psychology and education are emphatically clear about the importance of subjective experience to motivation and education, why then has so little energy been devoted to measuring the *experience of motivation*. This is the **problem for motivation research** that I'd like to call attention to -- despite the fact that the quality of experience plays an obvious and important role in the quality of learning, very little research systematically explores *how it feels* to learn.

There are many reasons I could mention that have played a part in making experience "invisible" in educational and psychological research. Perhaps most important is the widely held belief that subjective experience

is not a valid or reliable subject for scientific study. Many social scientists suspect that if one opens the door for subjectivity, in will sneak bias, measurement error, and the loss of empirical rigor. Another problem has been that experience is so fundamental, so much a part of the ongoing fabric of our lives, that -- as ironic as this may seem -- it often goes unnoticed. In other words, the very omnipresence of inward experience, like the continual presence of breathing, escapes our notice. The French philosopher Bergson (1983, p.70) expressed the problem this way: "How can we bring the human mind to reverse the direction of its customary way of operating . . . and no longer to see in halts or states mere snapshots taken of what is moving reality?"

I'd like to focus today, however, on a more concrete reason why experience has been ignored in motivation research -- it is simply very difficult to measure. In other words, the primary obstacle to measuring the experience of motivation has been methodological; without instruments to operationalize experiential variables, they have escaped, and they will continue to escape, systematic study.

In response, then, to the second question addressed by participants in this symposium -- **How should methodology be broadened to address this problem?** -- I'd like to suggest that the Experience Sampling Method (ESM) (Csikszentmihalyi, Larson, & Prescott, 1977) is a step in the right direction. The ESM was developed at the University of Chicago by Mihaly Csikszentmihalyi and Reed Larson. It is a method that uses electronic pagers to signal participants in a study, and prompt them to fill out a self-report form about the quality of their experience at that moment. For instance, teenagers have been asked to wear the pagers for one week and respond to approximately 50 signals sent randomly during the hours of 8:00 AM to 10:00 PM. Since the pager is easy to conceal and carry, the teenagers were "beeped" (as some like to call it) in a large number of naturalistic contexts, from doing homework to combing their

hair. When signaled, the teenagers took out a booklet of self-report forms comprised of open-ended and scaled items, and provide detailed reports about their location, thoughts, activities, companionship, and most importantly, their concentration, happiness, excitement, and other dimensions of their experience.

This method, like any other method, has its drawbacks, but it accomplishes a number of important things. First, it is a relatively unobtrusive way to observe teenagers' everyday lives. Second, it gathers information within naturalistic contexts. And most importantly, third, it gathers ecologically valid information about behavior (i.e., what teens are doing and when they do it), while *at the same time* gathering information about the inward stream of experience. It is this combination of "objective" and subjective information that I believe is important for motivation research. Motivation is any given context largely depends upon the fit between the person and some activity. The ESM provides an empirically rigorous way to assess this fit. In contrast, the use of questionnaires after the fact, which is the most common method in motivation research, loses vital information in regards to the dynamic and momentary connection between person and activity.

In regards to the shortcomings of the method, the pager interrupts the very stream of experience one is hoping to measure. Therefore the ESM is still a *reconstruction* of experience, albeit one that is made just a few minutes after being signaled. Such interruptions can be distracting to those wearing a pager. A second problem is that if the pager is noticed by classmates, a student may feel self-conscious or embarrassed, and such feelings might bias self-reports. In addition, the method is subject to other self-reporting biases. Just because a teenager responds to the pager by indicating feelings of high interest while doing homework, there is, of course, no guarantee that the response is genuine. Social desirability or compliance may be alternative explanations. Finally, issues of privacy are

likely to result in some activities and feelings not be reported.

Despite these shortcomings, however, the ESM is still one of the only methods available that can disclose the ongoing experiences of students in natural school settings. A pager response can tell us what a student is doing, and when and where he or she is doing it. Such information can also be verified by collecting independent information from others, for instance, parents and teachers. But in addition to the what, when, and where of an activity, the ESM illuminates the *why* and *how* of an activity from the subject's point of view. Thus the method synthesizes knowledge about particular behaviors and how such behaviors are privately experienced. In this way the ESM becomes an important tool for the study of motivation.

Technological advances will likely modify and improve the method in the future. For instance, lightweight and inexpensive portable computers will provide exciting new possibilities. Not only will such computers make the method more efficient in terms of coding and downloading information, they could be programmed to present cognitive tasks at different times of the day (e.g., an attentional task while a student is in class). In the not-to-distant future it will also be possible to connect *physiological* monitoring devices to portable computers, thus enabling a researcher to continually monitor a subject's responses throughout the day.

There are a growing number of perspectives which stress the importance of studying human lives in context. The ESM can be seen on a continuum with various hermeneutic, narrative or textual approaches that view the person's subjective interpretation as essential for understanding their behavior. But the ESM also represents a compromise with researchers who fear that incorporating "subjectivity" into scientific paradigms will threaten the empirical rigor of research. The method measures subjective meanings, but it also preserves an empirical rigor. The ESM can be thought of as a "systematic phenomenology" that

randomly samples from the stream of experience, yet retains the possibility of rigorous data analysis and hypothesis testing. In contrast to those who emphasize subjective experience and wish to collapse the boundaries between the social sciences and the humanities, most ESM researchers are attempting to meet the challenge of understanding private experiences with the use of scientific methods.

Finally, I'd like to briefly mention **how research using the ESM has begun to address the problem** of the invisibility of experience in motivation research. A new book describing the results of a four year study of talented teenagers will be published in the summer by Cambridge University Press. The book will be called -- Talented teenagers: The roots of success and failure. It will summarize a variety of methods that we used to assess adolescent talent development, but I'd like to mention a few of the results related to motivation that would not have been found if it weren't for the Experience Sampling Method.

Based on theoretical considerations drawn from John Dewey, the ESM was used to operationalize subjective interest as times when a student felt above average spontaneous interest (i.e., excitement, openness, and involvement) *while at the same time reporting* above average goal-directed interest (i.e., that their task was important to their goals). Results showed that after adjusting for the effects of family support, family income, scholastic aptitude, achievement orientation, and gender, students' interest while doing talent-related activities was positively correlated with three independent assessments of talent area performance three years later: the level of mastery students achieved as indicated by their school records, the ratings students received from their talent area teachers, and the students' assessments of their own level of engagement. Furthermore, divided interest (the separation of spontaneous involvement and goal-direction) was negatively correlated with mastery levels and subjective engagement scores.

When focusing more closely on a group of students that were highly

engaged at the end of their senior years (i.e., students who were doing talent activities everyday and planning to major in their talent area in college), such students reported that about 50% of their talent activities in their first years of high school held their undivided interest. This was *twice as much* as reported by a group of students with similar ability levels who later became disengaged from their talents. Disengaged students more often reported being spontaneously involvement but lacking goals (a state Dewey referred to as "fooling"), or concentrated on goals but not involved with what they were doing (a state Dewey called "drudgery"). These findings held across all of the talent areas. In other words, regardless of whether the teenagers were talented in math, science, music, or art, interest characterized the most highly engaged students in each area.

There is no time today to elaborate on these findings, or to summarize other important results in regards to how different classroom and family contexts affected students' interest and achievement. Let me conclude, though, by saying that the findings reported in the book provide ample support for the intuitions of students, teachers, and parents that positive subjective experience and interest are important for learning. They likewise support the sage insights of William James and John Dewey in regards to the role of interest in education, and the importance of examining the quality of experience in order to fully understand human motivation.

References

Bergson, H. (1983). An introduction to metaphysics: The creative mind. Totowa, N.J.: Helix.

Csikszentmihalyi, M., & Larson, R. (1984). Being adolescent. New York: Basic Books.

Csikszentmihalyi, M., Larson, R., & Prescott, S. (1977). The ecology of adolescent activity and experience. Journal of Youth and Adolescence, 6, 281-294.

Csikszentmihalyi, M., Rathunde, K., & Whalen, S. (in press). Talented teenagers: The roots of success and failure. New York: Cambridge University Press.

Dewey, J. (1933). How we think. Boston: D.C. Heath & Company.

Dewey, J. (1938). Experience and education. New York: Macmillan.

Dewey, J. (1980). Art as Experience. New York: Perigee.

James, W. (1890). Principles of Psychology. New York: Henry.

James, W. (1917). Selected papers on philosophy. London: J.M. Dent & Sons.

Krapp, A. (1989). Der Stellenwert des Interessenkonzepts in der pädagogisch orientierten Forschung [The significance of the interest concept in educational psychology]. Empirische Paedagogik, 3, 233-255.